

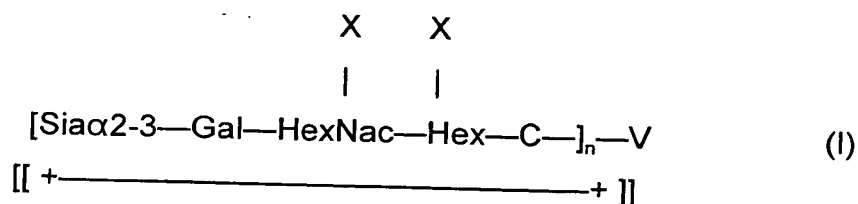
Appl. No. 10/502,049
Amendment dated: October 14, 2008
Reply to OA of: June 11, 2008

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claims 1-13(canceled).

14(currently amended). A method for ~~immunomodulation~~, immunosuppression, prevention or treatment of infections in a human or animal patient which comprises administering an effective amount to the patient of sialyzed carbohydrates of the following formula I ~~having at least one carbohydrate unit of formula II as shown in formula I:~~



[[(II)]]

wherein

Sia means a sialic acid or an O-acetyl sialic acid derivative in an $\alpha 2-3$ bond,

Gal means a galactose-monosaccharide unit,

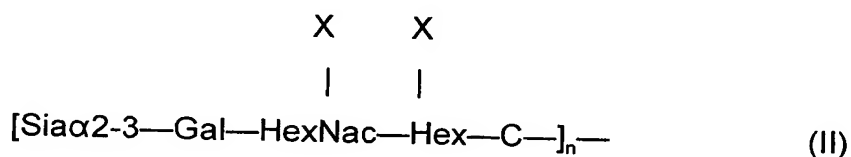
HexNac means an N-acetylated galactosamine-monosaccharide unit or glucosamine-monosaccharide unit (GalNAc or GlcNAc),

Hex means a galactose-monosaccharide unit or glucose-monosaccharide unit (Gal or Glc),

C represents HexNac or Hex or is absent,

n represents 1 to 50,

V represents i) OH, ii) a carbohydrate residue or iii) a connecting point on a carrier T, with the proviso that, if V represents i) OH, n represents 1, and, if V represents a ii) carbohydrate residue or a iii) carrier T, n means the number of the carbohydrate units of formula II that are each directly bound to this ii) carbohydrate residue or iii) carrier ~~and which are of the formula II~~ and formula II is as follows:



wherein X means a sialic acid or an O-acetyl sialic acid derivative thereof, wherein a second sialic acid or an O-acetyl sialic acid derivative or ~~several~~ two sialic acids or O-acetyl sialic acid derivatives can be bound to the sialic acid or the O-acetyl sialic acid derivative in an $\alpha 2-8$ bond, a phosphate group, sulphate group or carboxyl group, or a monosaccharide including a phosphate group, sulphate group or carboxyl group, and only one of the residues X is present, and n is as defined.

15(currently amended). The method according to claim 14, characterized in that one, two, ~~or three~~, or all of the following criteria ~~[[I)]]~~ i) through iii) are met:

- ~~[[I)]]~~ i) Sia represents acetyl neuraminic acid (NeuAc) or N-glycolyl neuraminic acid (NeuGc),
- ii) the carrier T is a peptide, a protein, a polymer or a biopolymer, with the linkage with said peptide or protein in particular being N-glycosidic or O-glycosidic, and
- iii) the carbohydrate residue constituting the residue V is a monosaccharide residue, an oligosaccharide residue or a polysaccharide residue.

16(previously presented). The method according to claim 14, characterized in that the carbohydrates of formula I are selected from the group consisting of disialyl-

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lacto-N-tetraose (DS-LNT, V = OH, HexNac = GlcNAc, Hex = galactose (Gal), C = glucose, Sia = α 2-3 NeuAc, X = α 2-6 NeuAc on HexNac), and disialyl-lacto-N-neo-tetraose (DS-LNnT), glycomacropeptide (GMP), ganglioside G_{D1a}, ganglioside G_{T1b} and ganglioside G_{T1c}.

17(currently amended). The method according to claim 14, characterized in that ~~if T represents lipophilic compounds, and glycolipids and gangliosides~~, the carbohydrate unit or carbohydrate units of formula II represents or represent the head end group(s) thereof.

Claims 18-19(canceled).

20(previously presented). The method according to claim 14, characterized in that the carbohydrate or carbohydrates of formula I is/are used in an amount of at least 1 mg per kg of body weight of said patient.

21(previously presented). The method according to claim 14, for the prevention and treatment of infections of the gastrointestinal tract, blood system, respiratory passages, urogenital tract, as well as the nasopharynx.

22(previously presented). The method according to claim 14, characterized in that the carbohydrate or carbohydrates of formula I are incorporated into a fluid or solid food composition whereby said composition is not human milk, dietetic composition or pharmaceutical composition for administration to a human or an animal, or serve for the preparation of such a composition for the immunomodulation, immunosuppression and treatment of infections in humans and animals.

23(previously presented). The method according to claim 22, characterized in that the pharmaceutical composition serves for an oral, lingual, nasal, bronchial,

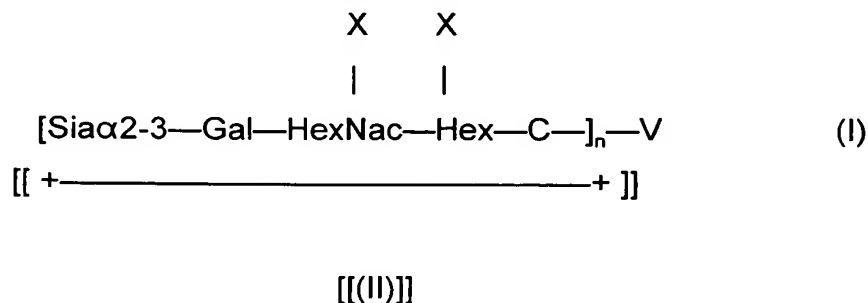
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vaginal, topical (skin and mucosa) and *per os* administration, for an administration by means of a probe into the stomach of a human or an animal, or for an administration as an infusion.

24(currently amended). Food composition, dietetic composition or pharmaceutical composition containing ~~at least one carbohydrate of formula I as described in claim 1~~ the sialyzed carbohydrates according to claim 26.

25(currently amended). The composition according to claim 24, characterized in that the composition ~~may contain a further carbohydrate or several further carbohydrates, which are different from the carbohydrates of claim 14 a further~~ further comprises active agent agents, or several further active agents and/or a further ingredient, which is known and suited for the corresponding composition, or more of such ingredients, wherein in the case of a pharmaceutical composition a usual an auxiliary agent, or several usual auxiliary agents, including diluents diluent, moisturizing agents agent, thickening agents agent, flavoring agents agent, sweetening agents agent, and carriers carrier, or food may be present, and in the case of a food composition or a dietetic composition, at least one further food component may be present.

26(currently amended). Sialyzed carbohydrates of ~~the following formula I having at least one carbohydrate unit of the following formula II:~~



wherein

Sia means a sialic acid or an O-acetyl sialic acid derivative in an α 2-3 bond,

Gal means a galactose-monosaccharide unit,

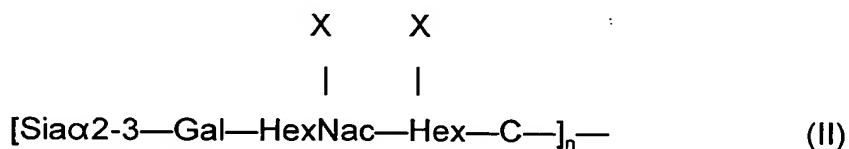
HexNac means an N-acetylated galactosamine-monosaccharide unit or glucosamine-monosaccharide unit (GalNac or GlcNac),

Hex means a galactose-monosaccharide unit or glucose-monosaccharide unit (Gal or Glc),

C represents HexNac or Hex or is absent,

n represents 1 to 50,

V represents i) OH, ii) a carbohydrate residue or iii) a connecting point on a carrier T, with the proviso that, if V represents i) OH, n represents 1, and, if V represents a ii) carbohydrate residue or a carrier T, n means the number of the carbohydrate units that are each directly bound to this ii) carbohydrate residue or iii) carrier and ~~which are of the formula II~~ wherein formula I has at least one carbohydrate unit of formula II:



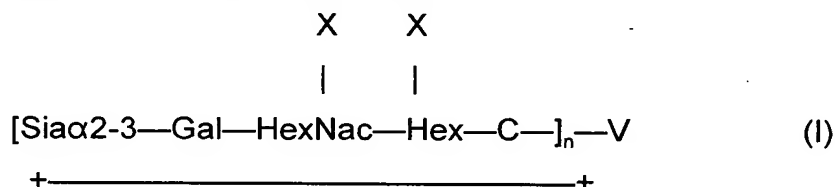
X means a sialic acid or an O-acetyl sialic acid derivative thereof, wherein a second sialic acid or an O-acetyl sialic acid derivative or several sialic acids or O-acetyl sialic acid derivatives can be bound to the sialic acid or the O-acetyl sialic acid derivative in an α 2-8 bond, a phosphate group, sulphate group or carboxyl group, or a monosaccharide including a phosphate group, sulphate group or carboxyl group, and only one of the residues X is present.

27(currently amended). The method according to claim 15, characterized in that all of the following criteria i) through iii) are met:

- [[I]] i) Sia represents acetyl neuraminic acid (NeuAc) or N-glycolyl neuraminic acid (NeuGc),
- ii) the carrier T is a peptide, a protein, a polymer or a biopolymer, with the linkage with said peptide or protein in particular being N-glycosidic or O-glycosidic, and
- iii) the carbohydrate residue constituting the residue V is a monosaccharide residue, an oligosaccharide residue or a polysaccharide residue.

28(previously presented). The method of claim 16 for the treatment of infections of the gastrointestinal tract of a human patient.

29(new). A sialized carbohydrate of the following formula I



wherein

Sia means a sialic acid or an O-acetyl sialic acid derivative in an $\alpha 2-3$ bond,

Gal means a galactose-monosaccharide unit,

HexNac means an N-acetylated galactosamine-monosaccharide unit or glucosamine-monosaccharide unit (GalNac or GlcNac),

Hex means a galactose-monosaccharide unit or glucose-monosaccharide unit (Gal or Glc),

C represents HexNac or Hex or is absent,

n represents 1 to 50 and is the number of the carbohydrate units that are each directly bound to V,

V represents i) OH, wherein n represents 1, ii) a carbohydrate residue selected from the group consisting of milk saccharide, pectin, cellulose and galactomannan,

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or iii) a connecting point on a carrier T, wherein carrier T is selected from the group consisting of a peptide, a protein, a polymer, a biopolymer, and a glycan, and

X is a glycan, sialic acid or an O-acetyl sialic acid derivative thereof, and wherein only one of the residues X is present.

30(new). A method for treating an infection in patient, comprising administering an effective amount of the sialyzed carbohydrates according to claim 29 to said patient.

31(new). A food composition, dietetic composition or pharmaceutical composition comprising the carbohydrates according to claim 29.